TABLES

Table 1-1
Summary of Compliance
November 2005

Extraction Well Network	Compliance Criteria Met (yes/no)	Comments
Flow Rate Performance - Target Extraction Rate		
Newmark North Extraction Well Network	No	The City is unable to sustain the three month rolling average Target Extraction Rate for the Newmark North extraction well network (see Table 2-3). A letter informing the EPA and DTSC of this condition was sent out on July 25, 2005. An evaluation of the conditions causing this flow rate variance was submitted December 6, 2005.
Newmark Plume Front Extraction Well Network	NA	Flow rate performance criteria are not applicable until the Muscoy OU is declared Operational and Functional
Muscoy Plume Extraction Well Network	NA	Flow rate performance criteria are not applicable until the Muscoy OU is declared Operational and Functional
Flow Performance - Particle Tracking		
Newmark Plume Front Extraction Well Network	NA	Flow performance criteria for the Newmark OU IRA are not applicable until particle tracking methodology proposed in the Operational Sampling and Analysis Plan is approved.
Muscoy Plume Extraction Well Network	NA	Flow performance criteria are not applicable until the Muscoy OU is declared Operational and Functional
Contaminant Performance - Downgradient Monitoring Wells		
Newmark Plume Front Extraction Well Network	NA	The first monitoring well sampling round for evaluating contaminant performance was conducted in November 2005
Muscoy Plume Extraction Well Network	NA	Contaminant performance criteria are not applicable until the Muscoy OU is declared Operational and Functional

Notes:
NA - not applicable (see comment for reason)

Table 2-1
Summary of Newmark OU O&M - Extraction Wells

Reporting Period: November 1, 2005 - November 30, 2005
System Operation Date: October 1, 2000
Operations Completed: 6 years 2 months

Newmark North Plant Extraction Well Network (EPA 006, EPA 007, Newmark 3)	
Description Routine Maintenance Performed	Daily equipment checks performed (see DHS report), monthly hands on physical, annual oil change, semi-annual check of VFD
Description of Problems Encountered	EPA 006 is operating on an approximate 12 hour daily schedule due to the pump breaking suction after extended pumping periods. The pump was last tested on June 30, 2005. Experiencing problems with chlorine injection on the Newmark G.A.C. vessels. Water flooding chlorination equipment preventing adequate disinfection.
Description of Process Improvements Implemented	New water service installed to provide better injection vacuum for Newmark chlorine gas. Has not solved problem completely.
Deviations from the Operational Requirements of the Consent Decree	Unable to meet the three month rolling average Target Extraction Rate (see the letter to the EPA/DTSC dated July 25, 2005).
Newmark Plume Front Extraction Well Network (EPA 001, EPA 002, EPA 003, EPA 004, EPA 005)	
Description Routine Maintenance Performed	Daily equipment checks performed (see DHS report), monthly hands on physical, annual oil change, semi-annual check of VFD
Description of Problems Encountered	None
Description of Process Improvements Implemented	None
Deviations from the Operational Requirements of the Consent Decree	None

Table 2-2
Summary of Extraction Well Flow Data
November 2005

Extraction Well[(2)]	Monthly Extracted Water Volumes (acre-ft)	Average Monthly Flow Rate (gpm)	30 Monthly Down Time (days)
Newmark North Plant Extraction Well Network			
EPA 006	53.2	401	14.5
EPA 007	179.6	1,355	-0.7
Newmark 3	118.7	896	0.3
Network Total	**351.5**	**2,651**	
Newmark Plume Front Extraction Well Network			
EPA 001	192.5	1,452	-0.1
EPA 002	199.8	1,507	0.6
EPA 003	200.1	1,510	-0.8
EPA 004	206.6	1,558	0.1
EPA 005	205.3	1,549	0.3
Network Total	**1004.4**	**7,575**	

Notes:

Per the terms of the Statement of Work, once Muscoy is declared O&F the City will be required to demonstrate flow compliance with each extraction well networks Target Extraction Rates considering the specified maintenance allowances. At such time the City will provide the supporting calculations in a tabular format.

NA - Not available

(1) - Cumulative volume extracted since Newmark OU System Operations Date (October 1, 2000)

Table 2-3
Three Month Rolling Average Extraction Volume and Extraction Rate Calculations
November 2005

Extraction Well	Run Times (Days)				Total Down Time For Last Three Months	Extraction Volumes (acre ft)				Extraction Rates (gpm)			
	September 2005	October 2005	November 2005	Total For Last Three Months		September 2005	October 2005	November 2005	Total Pumpage Last Three Months	Three Month Rolling Average Extraction Rate	Design Extraction Rate (DER)	Target Extraction Rate (TER) [1]	Difference Between Three Month Rolling Average and TER
Days in Period >>	30	31	30	91									
Newmark North Plant Extraction Well Network[3]													
EPA 006[2]	14.8	15.5	14.4	44.7	46.3	50.3	55.3	53.2	158.9				
EPA 007	29.9	30.7	29.3	89.8	1.2	177.7	185.9	179.6	543.2				
Newmark 3	29.9	29.7	29.6	89.2	1.8	117.7	119.0	118.7	355.5				
Network Total						**345.8**	**360.3**	**351.5**	**1057.6**	**2629.6**	**3900.0**	**3525.0**	**-895.4**

Notes:

NA - Not Applicable

(1) TERs are adjusted for the maintenance allowance.

(2) This extraction well can only be operated 12 hours a day in order to avoid pump cavitation created by the depleted aquifer conditions.

CD Consent Decree

DER Design Extraction Rate

gpm gallons per minute

O&F Operable and Functional

SOW Statement of Work (entered with CD March 23, 2005)

TER Target Extraction Rate

Table 2- 4
Extraction Well Monitoring Results - PCE and TCE
November 2005

Extraction Well	Date Sampled	PCE Concentration (µg/L)	TCE Concentration (µg/L)
Newmark North Extraction Well Network			
EPA 006	10/24/2005	2.7	<0.5
EPA 007	10/26/2005	4.1	0.5
Newmark 3	10/24/2005	2.4	<0.5
Newmark Plume Front Extraction Well Network			
EPA 001	10/24/2005	5.4	1.5
EPA 002	10/24/2005	4.8	1.5
EPA 003	10/24/2005	3.7	0.8
EPA 004	10/24/2005	1.4	<0.5
EPA 005	10/24/2005	<0.5	<0.5

Notes:

These data have been collected and validated using standard SBMWD protocol as required under SBMWDs DHS Permit. Once the project QA/QC Plan has been prepared and approved, SBMWD will adhere to the QA/QC plan when sampling the extraction wells and validating laboratory data.
NM - Not monitored during the reporting period

Table 3-1
Summary of Newmark OU O&M - GAC Treatment Plants

Reporting Period: November 1, 2005 - November 30, 2005
System Operation Date: October 1, 2000
Operations Completed: 6 years 2 months

Newmark North GAC Treatment Plant	
Description Routine Maintenance Performed	Daily equipment checks performed (see DHS report)
Description of Problems Encountered	Encountering trouble with lifting vault lids for Chlorine injection/Cla-valve. Lids are extremely difficult to open. Scheduled inspection for estimate on repair on December 21, 2005.
Description of Process Improvements Implemented	None
Deviations from the Operational Requirements of the Consent Decree	None
17th Street GAC Treatment Plant	
Description Routine Maintenance Performed	Daily equipment checks performed (see DHS report)
Description of Problems Encountered	None
Description of Process Improvements Implemented	None
Deviations from the Operational Requirements of the Consent Decree	None
Waterman GAC Treatment Plant	
Description Routine Maintenance Performed	Daily equipment checks performed (see DHS report)
Description of Problems Encountered	Encountering trouble with lifting vault lids for Chlorine injection/Cla-valve lids are extremely difficult to open. Scheduled inspection for estimate on repair on December21,2005.
Description of Process Improvements Implemented	None
Deviations from the Operational Requirements of the Consent Decree	None

Table 3-2
Summary of Treatment Plant Flow Data and Mass Removal Estimates
November 2005

Treatment Plant	Extraction Wells Treated By Plant	Treated Water Volumes (acre-ft)	Average Monthly Flow Rate (gpm)	Estimated Monthly GAC Mass Removal [1] (lbs)	Estimated Cumulative GAC Mass Removal[2] (lbs)
Newmark North GAC Treatment Plant	EPA 006, EPA 007 and Newmark 3	351.5	2,651	4.5	280.5
17th Street GAC Treatment Plant	EPA 003	200.1	1,510	2.8	194.0
Waterman GAC Treatment Plant [3]	EPA 002, EPA 004 and EPA 005	611.7	4,614	5.3	473.9
Total		**1163.4**	**8774.4**	**12.6**	**948.3**

Notes:

(1) - Monthly mass removal estimates are based on Monthly Treatment Summary sheets documented in monthly DHS reports.

(2) - Cumulative mass removal estimates are for the period since Newmark was declared O&F (October 1, 2000). The historical estimate prior to Consent decree entry is based on a combination of carbon life loading history data and Monthly Treatment Summary spreadsheet.

(3) - Since the beginning of March extracted groundwater from EW-1 has been diverted to the 19th Street Treatment Plant. Therefore, the sum of volume of groundwater extracted from Newmark OU wells is different then the sum of the volume treated by the Newmark OU treatment plants.

Table 3-3
Treatment Plant Monitoring Results - PCE and TCE
November 2005

Extraction Well	Date Sampled	PCE Concentration (µg/L)	TCE Concentration (µg/L)
Newmark North GAC Treatment Plant			
Influent	16-Nov-05	3.2	<0.5
Lead Vessel 1	16-Nov-05	<0.5	<0.5
Lead Vessel 2	16-Nov-05	<0.5	<0.5
Lead Vessel 3	16-Nov-05	<0.5	<0.5
Lead Vessel 4	16-Nov-05	<0.5	<0.5
Lead Vessel 5	16-Nov-05	<0.5	<0.5
Lead Vessel 6	16-Nov-05	<0.5	<0.5
Lead Vessel 7	16-Nov-05	<0.5	<0.5
Combined Effluent	3-Nov-05	<0.5	<0.5
	10-Nov-05	<0.5	<0.5
	16-Nov-05	<0.5	<0.5
	22-Nov-05	<0.5	<0.5
17th Street GAC Treatment Plant			
Influent	16-Nov-05	3.9	0.9
Lead Vessel 1	16-Nov-05	<0.5	0.7
Lead Vessel 2	16-Nov-05	0.6	0.9
Lead Vessel 3	16-Nov-05	1.1	0.8
Combined Effluent	3-Nov-05	<0.5	<0.5
	10-Nov-05	<0.5	<0.5
	16-Nov-05	<0.5	<0.5
	22-Nov-05	<0.5	<0.5
Waterman GAC Treatment Plant			
Influent	16-Nov-05	2.2	0.6
Lead Vessel 1	16-Nov-05	1.9	1.1
Lead Vessel 2	16-Nov-05	1.1	0.9
Lead Vessel 3	16-Nov-05	1.8	1.1
Lead Vessel 4	16-Nov-05	2.4	1.1
Lead Vessel 5	16-Nov-05	2.1	1.1
Lead Vessel 6	16-Nov-05	3.0	1.5
Lead Vessel 7	16-Nov-05	2.8	1.2
Lead Vessel 8	16-Nov-05	2.6	1.2
Combined Effluent	3-Nov-05	<0.5	<0.5
	10-Nov-05	<0.5	<0.5
	16-Nov-05	<0.5	<0.5
	22-Nov-05	<0.5	<0.5

Notes:

These data have been collected and validated using standard SBMWD protocol as required under SBMWDs DHS Permit. Once the project QA/QC Plan has been prepared and approved, SBMWD will adhere to the QA/QC plan when sampling the extraction wells and validating data.
NM - Not monitored during the reporting period

Table 4-1
Summary of Newmark OU O&M - Water Level Monitoring

Reporting Period: November 1, 2005 - November 30, 2005
System Operation Date: October 1, 2000
Operations Completed: 6 years 2 months

Newmark and Muscoy OU Monitoring Wells	
Description of Routine Monitoring and Maintenance Performed	Periodic download of RTU based water level data and RTU hardware, software and sensors checks. Collection of manual water levels to verify RTU based readings.
Description of Problems Encountered	None
Description of Process Improvements	None
Deviations from the Operational Requirements of the Consent Decree	None. Daily water level readings were collected each day as required by the SOW.
Newmark and Muscoy OU Extraction Wells	
Description Routine Monitoring and Maintenance Performed	Periodic download of water level data from RTUs as part of the completion of the Muscoy OU startup aquifer testing (per the schedule in the EPA/URS Field Sampling Plan) and less frequently for extraction wells monitored as part of Newmark OU IRA operations.
Description of Problems Encountered	EPA001 had a defective radio and was replaced.
Description of Process Improvements	None
Deviations from the Operational Requirements of the Consent Decree	None.
Site-Wide Monitoring Wells	
Description Routine Monitoring and Maintenance Performed	Collected monthly manual water level measurements on November 29, 2005
Description of Problems Encountered	The City is unable to collect Site-Wide manual water levels from some of the wells designated in the SOW due to access limitations, water level depths beyond the length of the sounding tape or omissions. In addition the City has not been able to locate one well (PZ125) it appears the well has been paved over.
Description of Process Improvements Implemented	Instituted a new electronic field data entry form to query collection of data from the entire well list and minimize data entry errors. New field form also helps to assure that a basic set of information well be collected site-wide and provides standard comments and notes to more accurately determine the extent and nature of work completed at each site during the monitoring period. Completed a field verification of surveyed elevations and measuring points used during monitoring . Where these differed, the elevation offsets were measured and used to estimate the elevation of the actual measurement reference point. The revised reference elevations were entered into the new electronic data entry field form.
Deviations from the Operational Requirements of the Consent Decree	The Site-Wide manual water levels were not collected from the following wells: MW 126 (well appears to be dry), PZ-124 (well appears to be dry, PZ 125 (well appears to have been paved over) Muscoy Mutual No. 5 (air line installed by Muscoy Mutual prevents the lowering of the sounding tape and we are not authorized to remove.
Wells Monitored Voluntarily	
Description of Routine Monitoring and Maintenance Performed	Collected monthly manual water level measurements. Downloaded electronic water level data from USGS website.
Description of Problems Encountered	31st and Mt View is located in a confined space, the City is in the process of developing an alternative measuring method to monitor this well.

Note:

Table 6-1
Schedule of Upcoming O&M, Monitoring and Reporting Events
Planning Period: December 2005/January 2006

Task/Item	Planned Event
Newmark OU Extraction Wells	
Pump/Well Maintenance	Pumping equipment change out EPA 003 - anticipated December 2005
Electrical/Controller Maintenance	Routine
SCADA System and RTU System Maintenance	Continued work on RTU - SCADA communications and system reliability, changing radio frequency. Troubleshoot and repair RTUs and RTU programming as needed.
Extraction Well Monitoring	Download water level data and check RTU offsets.
Other	None
Newmark OU Treatment Plants	
Carbon Change Outs	None
Electrical/Controller Maintenance	None
SCADA System and RTU System Maintenance	None
Treatment System Monitoring	Routine treatment plant sampling
Other	None
Monitoring Wells	
SCADA System and RTU System Maintenance	Continued work on RTU - SCADA communications and system reliability. Troubleshoot and repair RTUs and RTU programming as needed.
Water Level Monitoring - SCADA Wells	Download water level data and check elevation offsets. Troubleshoot and repair transducers as needed.
Water Level Monitoring - Site-Wide Well	Collect monthly manual water levels
Monitoring Well sampling	EPA/URS sampling will be performed in support of Muscoy OU one-year performance evaluation.
Other	None
Project Documents	
Progress Report - December 2005	Scheduled to be submitted January 31, 2006.
Community Relations	
Fact Sheets	None planned
Community Meetings	None planned

Table 6-2
Submittal of Deliverables/Documents For 2005

Deliverable	Date Submitted	Status
Groundwater Modeling Work Plan	April 15, 2005	Approved by EPA in Correspondence Dated May 26, 2005
Transmittal of Treatment Plant and Extraction Well Flow Data - March/April 2005	May 31, 2005	Submitted to EPA and DTSC.
Progress Report - March/April 2005	June 14, 2005	Submitted to EPA and DTSC. This is the first monthly progress report submitted. Review and comment pending.
Letter requesting an extension for QA/QC Plan Submittal	June 15, 2005	Currently negotiating the terms of the extension with EPA. QA/QC Plan due date suspended during this time.
Health and Safety Plan	June 17, 2005	Submitted to EPA and DTSC.
Operations and Maintenance Plan	June 17, 2005	Submitted to EPA and DTSC.
Time Line and Schedule	June 21, 2005	Submitted to EPA and DTSC.
Staffing Plan	June 21, 2005	Submitted to EPA and DTSC.
Progress Report - May 2005	June 30, 2005	Submitted to EPA and DTSC.
North Plant Target Extraction Rate Notification	July 25, 2005	Submitted to EPA and DTSC.
Progress Report - June 2005	July 31, 2005	Submitted to EPA and DTSC
Progress Report - July 2005	August 31, 2005	Submitted to EPA and DTSC
Letter requesting an extension for Baseline Mitigation Plan Submittal	September 22, 2005	Submitted to EPA and DTSC
Progress Report - August 2005	September 30, 2005	Submitted to EPA and DTSC
Letter requesting an extension for the OSAP and the QA/QC Plan	October 5, 2005	Submitted to EPA and DTSC
Progress Report - September 2005	October 31, 2005	Submitted to EPA and DTSC
Letter requesting an extension for the OSAP and the QA/QC Plan	November 8, 2005	Submitted to EPA and DTSC
Coordination Plan for November Sampling Event	November 8, 2005	Submitted to EPA
Operational Sampling Analysis Plan (OSAP)	November 8, 2005	Submitted to EPA and DTSC
Quality Assurance/Quality Control Plan (QA/QC)	November 21, 2005	Submitted to EPA and DTSC
Progress Report - October 2005	November 30, 2005	Submitted to EPA and DTSC
Preliminary Review of the Muscoy OU Capture Analysis Reports (August and September 2005)	December 6, 2005	Submitted To EPA and DTSC

Table 6-3
Summary of Newmark Groundwater Flow Model Construction Activities
November 2005

Modeling Component	Progress Summary
Activities Conducted During The Reporting Period	
Data Compilation	1) Prepared data sets for importation into the model 2) Prepared data trend analysis in reparation for model input
Conceptual Model Development	1) Documented conceptual model approach, process and results 2) Extended the conceptual model basin -wide (with Geosciences and Numeric Solutions) 3) Refined lithology model in the vicinity of the IRA system through detailed analysis of spinner logs, chemistry data, and head data
Model Construction	1) Prepared data sets for conversion to refined stress periods 2) Documented construction for presentation to TAC
Model Calibration	1) Complete the Draft Calibration Plan
Model Calibration	1) Calibration continued with evaluating each of the above described runs with the USGS model for calibration of water balance and head values 2) Continued development of Calibration Plan
Meetings	No meetings were conducted during November
Activities Planned/Conducted in December and January	
Data Compilation	1) Continue to catalogue data received to date 2) Request 2005 production and head data in preparation of model verification simulation
Conceptual Model Development	1) Distribute Conceptual model technical memorandum to TAC 2) Finalize the stratigraphic model (with Geosciences)
Model Construction	Continue to methodically refine model as follows: a) incorporation of hydrostratigraphy detailed in the conceptual model b) refine time steps
Model Calibration	1) Distribute the Draft Calibration Plan and present for comments to the TAC 2) Initiate execution of the Calibration Plan
Meetings	1) Working Group Meeting tentatively scheduled for December 13 2) TAC meeting tentatively scheduled for December 15

Note:

The Newmark Groundwater Flow Model is being co-developed with the Regional Basin Flow Model. As such, the City of San Bernardino Water Department's consultant (SECOR) is working jointly with San Bernardino Valley Municipal Water District's consultant (GEOSCIENCE Support Services) to fulfill both parties modeling objectives. This table provides a summary of the activities performed and activities planned in support of this joint venture.